



Experiment 1

Student Name: Karan

UID: 23BCS11811

Branch: BE-CSE

Section/Group: KRG-3A

Semester: 6th

Date of Performance: 12/01/26

Subject Name: Full Stack II

Subject Code: 23CSH-309

1. Aim: To design and implement the foundational frontend architecture of the EcoTrack application using modern React practices, Vite tooling, and ES6+ JavaScript features.

2. Objective:

- To set up a React project using Vite with proper project structure
- To understand component-based architecture in React
- To apply ES6 array methods (map, filter, reduce) for data-driven UI rendering
- To separate concerns using components, pages, and data modules

3. Implementation/Code:

Header.jsx:

```
const Header = ({ title }) => { return  
(  
  <header style={{ padding: "0.5rem", backgroundColor: "#27ae60" }}>  
    <h1>{title}</h1>  
  </header>  
)  
}  
export default Header;
```

Logs.js:

```
export const logs = [  
  { id: 1, activity: "Car Travel", carbon: 4 },  
  { id: 2, activity: "Electricity Usage", carbon: 6 },  
  { id: 3, activity: "Cycling", carbon: 0 },  
];
```

Dashboard.jsx:

```
import { logs } from '../data/logs';
const Dashboard = () => {
  const total = logs.reduce((sum, log) => sum + log.carbon, 0); // exporting this function
  directly change the data
  return (
    <div className="dashboard">
      <h2>Dashboard</h2>
      <p>Total Carbon Footprint: {total} kg</p>
      <ul>
        {logs.map(log => (
          <li key={log.id}>
            {log.activity} = {log.carbon} kg
          </li>
        ))}
      </ul>
    </div>
  );
};

export default Dashboard;
```

Logs.jsx:

```
import { logs } from '../data/logs'

const Activities = () => {
  const highCarbon = logs.filter(log => log.carbon > 3);
  const lowCarbon = logs.filter(log => log.carbon <= 3);
  return (
    <div>
      <h2>High Carbon Activities</h2>

      <ul>
        {highCarbon.map(log => (
          <li key={log.id} style={{ color: "red" }}>
            {log.activity} = {log.carbon} kg
          </li>
        ))}
      </ul>

      <h2>Low Carbon Activities</h2>
      <ul>
```

```

        {lowCarbon.map(log=>(
          <likey={log.id} style={{color:"green"}}>
            {log.activity}={log.carbon}kg
          </li>
        ))}
      </ul>
    </div>
  );
};

```

export default Activities;

App.jsx:

```

import Header from './components/Header'; import
Logs from './pages/Logs';
import Dashboard from './pages/dashboard';

```

```

const App = () => {
  return (
    <div>
      <Header title="Ecotrack-Experiment1"/>
      <main style={{padding:"1rem"}}>
        <Dashboard/>
        <br></br>
        <Logs/>
      </main>
    </div>
  );
}
export default App;

```

Main.jsx:

```

import { StrictMode } from 'react'
import { createRoot } from 'react-dom/client' import
'./index.css'
import App from './App.jsx'

```

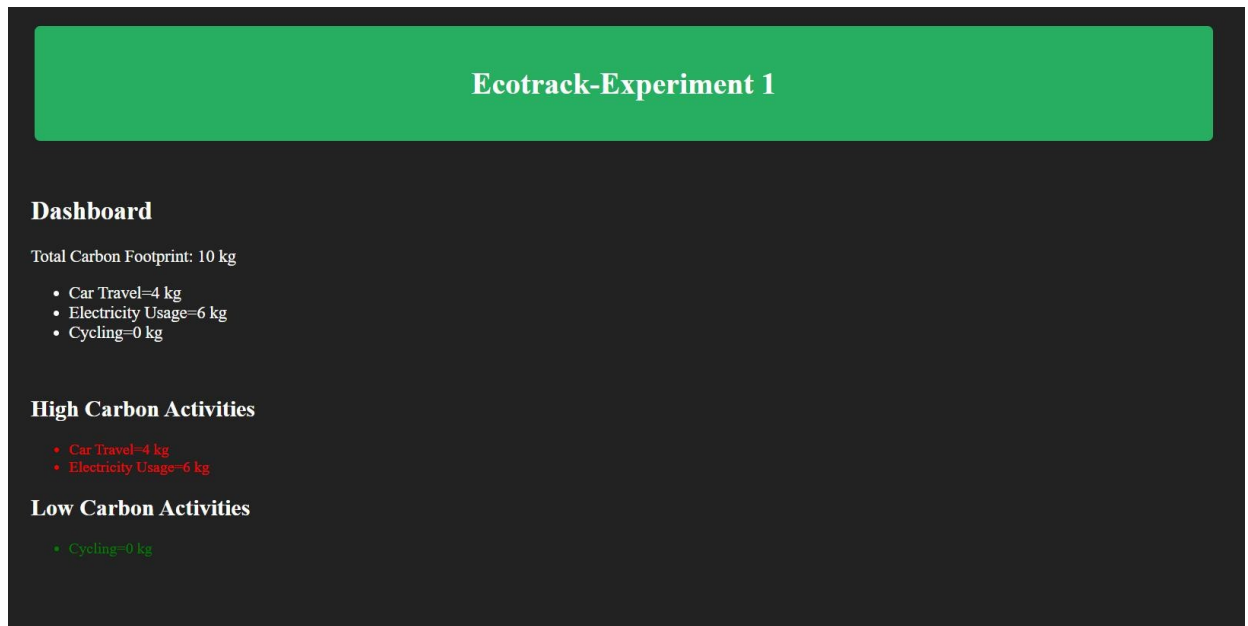
```

createRoot(document.getElementById('root')).render(
  <StrictMode>
    <App/>
  </StrictMode>,

```

)

4. Output



5. Learning Outcome

1. Ability to set up and configure a React application using Vite, understanding modern frontend tooling and project structure.
2. Understanding of component-based architecture in React, enabling modular, reusable, and maintainable UI development.
3. Practical use of ES6 JavaScript array methods (map, filter, reduce) for implementing data-driven user interface rendering.
4. Application of separation of concerns principles by organizing code into components, pages, and data modules.
5. Capability to design a basic scalable frontend architecture, suitable for future enhancements such as routing, state management, and API integration.